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of the
South Carolina Medical Association

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DR. G. M. MOOD

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EDITORIAL

A. M. A. NOTES

The nineteen hundred twenty-five meeting of the American Medical Association at Atlantic City, New Jersey while not as large from the point of view of attendance as the meeting in Chicago last year, the scientific aspects left little to be desired. The attendance approximated five thousand. All of the sections functioned admirably. The scientific exhibits are growing each year to be morefully appreciated. We can recall not many years ago when comparatively few doctors visited these exhibits, and they were not placed in very prominent positions. All of this has been changed as if by magic. Thousands visit them daily. The location is conducive to this enlarged attendance. Perhaps a leading feature is the fact that the exhibits are in charge in many instances of men of international fame to explain them. The work of the House of Delegates was marked by harmony, and constructive vision. Great impetus was given in the House of Delegates to periodic health examinations, and also by President Haggard in his address. It is clear that this work must be done by the general practitioner, and not left to commercial enterprises. We are very proud of the fact that the South Carolina Medical Association has already taken advanced steps along this line. Among the South Carolina doctors present at the A. M. A. meeting were the following:

Bates, Chas. O., Greenville.
Brockman, Leroy, Greer.
Brockman, William Thos., Greer.
Fouche, Jas. S., Columbia.
Hayne, James A., Columbia.
Lemmon, Chas. J., Sumter.
McLeod, F. H., Florence.
Parker, John W., Greenville.
Routh, Foster M., Columbia.
Sharpe, Thos. G., Greenville.
Smith, Josiah Edward, Charleston.

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Taft, A. Robert, Charleston.
Finney, Roy P., Gaffney.
Jervey, J. W., Greenville.
Ravenel, James J., Charleston.
Sheridan, William M., Spartanburg.

STATE ASSOCIATION ACCORDED TWO DELEGATES TO A. M. A.

At the meeting of the American Medical Association held at Atlantic City May 25-29, 1925 by virtue of an amendment to the constitution of the A. M. A. whereby the representation in the House of Delegates may be increased from one hundred and fifty to one hundred and seventy-five, and The South Carolina Medical Association, having increased its enrollment to nine hundred and fifty-three members, under the reapportionment by the A. M. A. the South Carolina Medical Association will be entitled to an additional delegate.

South Carolina was one of the first states in the Union to recognize the great advantage of sending the Secretary as a delegate continuously to the A. M. A. This policy is now followed by a large number of other states. This continuity of contact is conceded by all organizations as being necessary to cement personal and official friendships which count for so much in recognition for appointment on important committees.

South Carolina has been most fortunate in having a delegate for fifteen years who has been honored by appointments every year, and often the chairmanship has fallen to his lot. He served this year as Chairman of the Reference Committee on the Reapportionment of Delegates. It is readily appreciated that an additional delegate is highly desirable. Measures often come up where a consultation of state delegates may aid very materially in deciding prominent issues. The new delegate will be elected at the Sumter session in 1926 by the House of Delegates. We believe the Association should give careful thought to the selection of this delegate. He should be a man thoroughly conversant with the problems of organized medicine. He should have a good knowledge of parliamentary procedure. He should have a personality capable of making a favorable impression for his state. He should be willing to forego very largely the scientific program inasmuch as the work of the House of Delegates of the A. M. A. requires the major interest of the delegate. Lastly, he should be willing to serve the state medical association in this capacity for many years as outlined above.

The American Medical Association being the world's greatest medical organization has developed such gigantic interests that no one can compass them understandingly without prolonged study and opportunities for service.

SOUTH CAROLINA BIRTH REGISTRATION URGENT NECESSITY

The Bureau of Vital Statistics of the State Board of Health is appealing to every doctor in the state for immediate co-operation in the matter of recording every birth promptly. Unless this is done at once the state will be removed from the registration area, and our reputation as a progressive state in all matters of public health will suffer thereby. We have never yet asked the profession of South Carolina in vain for assistance. We are confident that the appeals being sent out to the individual physicians and to all of the constituent county societies will be acted upon promptly. The government has consented to recheck the state in September. Let us see to it that nothing is left undone to satisfy the requirements.

ORIGINAL ARTICLES

CANCER AS VIEWED BY THE ANCIENTS

By J. H. Taylor, M. D., F. A. C. S., Columbia, S. C.

I ANCIENT EGYPT

In the oldest book we have on Egyptian Medical practice, the "Papyrus Ebers", circa 1550 B. C., cancer is mentioned and in columns 68 to 69 a number of remedies are recommended. The lack of thorough physiological and anatomical knowledge at that day made it impossible to give an accurate description of the disease. Cancer at that time was a term used to cover every swelling.

Ulcerous cancer was treated by the ancient Egyptians with a salve consisting mainly of arsenic and vinegar and it was in use down to the 16th century under the name Egyptian Ointment. Fabricius Hildenus removed it from the list of medicines.

In a late cuneiform inscription found in the library of ancient Ninevah (800 B. C.) carcinoma of the breast is mentioned, according to Oefele the medical historian.

II ANCIENT INDIA

The ancient healers of India were the first to attempt a systematic account of diseases. They knew little of anatomy, but in diagnosis and therapeutics and especially in surgery, they rendered remarkable service.

In the very oldest Hindu work (Ramajana about 2000 B. C.) mention is made of the extirpation of neoplasms and at the same time Egyptian ointment was used as a prevention of relapses.

Hindu medical activity attained its highest successes during the centuries 800 B. C. down to 500 B. C. Their principal work was the Ayerveda of Susruta (5 books with 120 chapters). In the 4th book, chapters I and II ulcers are treated and 15 or 16 different kinds are distinguished.

The Hindus adopted a pathology based on the humors, air, bile and mucus, which they thought produced the diseases.

Ulcerous swellings were treated with a decoction of cassia and neoplasms with an arsenic salve which, according to Wise, was made of iron, rock salt and red arsenic. Even at this time red hot iron was used in the extirpation of ulcers.

III GREECE

1. Age before Hippocrates.

(Homer to Hippocrates 960 to 460 B. C.)

The scientific tendency in medicine started with the Greeks. Archilochus (719-633 B. C.) mentions a tumor on the thigh.

Noteworthy in this epoch is the story of Democedes (520 B. C.) who was carried as a slave to the Persian court of Darius Hystapsis at Susa and healed the king of an injured foot and his wife Atossa, daughter of Cyrus, of carcinoma of the breast.

The first man to free medical practice from the web of mysticism and speculation and commence a system built upon observation and experience was

2. Hippocrates (460 to 375 B. C.)

In a period of about 200 years there were seven of the followers of Aesculapius who bore this name. The sixth in this list was the great Hippocrates who was born about 460 B. C. on the island of Cos and died at Larissa (Thessaly) in the year 375 B. C.

In his numerous writings he frequently mentions cancer. He was the first to use the terms cancer (crab) and carcinoma (an eating sore). The first term, cancer (crab) he used for all sorts of non--healing ulcers, and the second, carcinoma (eating sore) only for malignant, non-healing cancer. His pathology was built upon the theory that all diseases were caused by *blood, mucus* or black and yellow gall, ac-

Read before the South Carolina Medical Association, Spartanburg, S. C., April 22, 1925.

cording as there is a lack or excess of these humors in the body.

He mentions the case of malignant cancer in the throat of a man which he healed by burning. He was also acquainted with cancer of the internal organs. In one of his writings on the "Diseases of Women" he describes the scirrhous induration of the cervix uteri and less completely cancer of the breast. He writes: "In the breast hard lumps are formed and do not fester but become harder and harder and result in hidden cancer". He seems also to have known cancer of the stomach which he appears to describe under the term "black vomit".

As to the prognosis he stresses the imporportance of early treatment.

He recommends the Carian Medicament, consisting of black hellebore, sandarac, copper splinters (shavings), heated lead, sulphur, arsenic and Spanish fly.

An age of speculation and skepticism turned the successors of Hippocrates away from the empirical method, which, however was later revived and brought into use. We note here merely two names. Serapion of Alexandria, 270 B. C. used sulphur in cases of skin disease, and Heraclides of Tarentum, used opium in cases of cramp.

IV ROME

The seat of Medical activity is transferred from Greece to Rome.

M. Porcius Cato in his work on agriculture (De re rustica) refers to three kinds of cabbage which may be used in cases of cancer (234-149 B. C.)

It is noteworthy that we have in these early Latin writings cancer, and carcinoma used for the Hippocratic terms of similar import.

We note also Cato's division into three kinds of cancer: black cancer; white cancer; fistulous cancer.

The practice of medicine came to occupy a settled place in the civilization of Rome under the influence of *Asclepiades* (128-56 B. C.) who founded the school of methodists and who pushed to one side the pathology of the humors, and insisted on the influence of solids in the production of diseases (Solid pathology). All symptoms and clinical conditions were said to arise from the wrong mixing and the resultant forms of solid matter. He did not pay especial attention to cancer.

Aulus Cornelius Celsus (30 B. C.-38 A. D.)

Master of all the learning of his day, he wrote eight books on medicine (De Medicina) and is of interest to us though his want of anatomical information was evident. He believed that the *arteries* were filled with *air* and he made no distinction between the nerves and the sinews.

Down to Celsus the term carcinoma was used for all sorts of swellings and tumors, he circumscribed the term in an effort at delimitation. He says: "It develops as a faulty formation especially in the upper portions of the body about the face, nose, ears, lips, and breasts of women—and frequently becomes an open sore. Generally it starts with what the Greeks call cacoethes, 'a bad growth', then from this it turns into a carcinoma without ulcer, then it becomes an ulcer and then an open ulcer."

Celsus used the term cancer to indicate different forms of mortification or gangrene and did not consider it so malignant as carcinoma.

He distinguished the following different kinds of cancer:

1. The ulcer which is only an induration or scirrhus.
2. The Carcinoma without an open sore—hidden cancer or occult cancer.
3. Open sore (Cancer apertus).

Celsus was the first to describe the lumpy nature of cancer as an important diagnostic sign, and he distinguishes cancer from a number of different kinds of swelling and tumor. He knew of the swelling of the axillary glands in cancer of the breast and also cancer of the liver and spleen.

In prognosis he considered only the so called "bad growth" as favorable. He writes: "Nothing can be got rid of but cacoethes, or bad growth, the rest are irritated by remedies and the more force is employed the greater does the trouble become".

Therapeutic tests, according to Celsus, determine the diagnosis of carcinoma. He says: "Some use caustic medicine, some burn with

a hot iron, some make an incision with a knife. No treatment proves effectual, but the burnt spot continues to be irritated and to spread until they use the knife; and even then after the scar is healed the trouble returns and becomes the cause of death. But to distinguish the cacoethes (bad growth) which is susceptible of a cure before it reaches the carcinoma stage is impossible except by the use of time and experiment."

Accordingly we see that Celsus is a decided *pessimist* as regards the *therapeutics of true carcinoma.* Nevertheless he favors operation in the less severe forms of cancer, for example, lip cancer.

Celsus was acquainted with the vessel ligature and the suture, which were unknown to Hippocrates. Celsus extirpated mamma-carcinoma but he never allowed the excision of the pectoralis major.

Of his contemporaries Pliny the Younger writes of the inner therapeutics of cancer and mentions treatment. The principal remedies used were plants of the cabbage kind and figs. *Actius reports form Archigenes* (54-117 A. D.) the following: "Cancerous tumors most frequently arise about the mamma and they attack *women* more than men, and especially those women who have large fleshy breasts;—the term 'Cancerous' is taken from the living animal (crab) which, if it takes hold of anything with its claws, is hard to be pulled off." This was the general idea of cancer down to and into the 18th century. He further says: "There are two special differences in cancers. Some are without ulcer, called occult; and some with the ulcer. But Philoxenus calls those occult cancers which are entirely removed from sight, as in the *uterus* and in the *intestines.*"

Here we learn for the first time in history that cancer of the uterus and of the intestines was known to the ancients, although they made no accurate investigations of it as they did not make dissections of human beings.

Archigenes also describes the vein network that extends from a cancer with its roots and hardness. He knew well the swelling of the axillary glands and the spreading pain. The "medicament of Archigenes for ulcerous cancers" was still used in the 16th century. (It consisted of wax, turpentine, beef tallow, deer heart, oil of rose, goose fat, honey, Frankincense, three parts sweat of sheep's wool. (Lanolin).

We mention briefly *Soranus of Ephesus* (98-117 A. D.) the celebrated physician for diseases of women. He lived under the Emperor Trajan. He was acquainted with the uterine speculum; though he seldom refers in his writings to carcinoma of the genitalia.

Rufus of Ephesus lived at this time and was the first to describe a *melanotic* cancer. He describes a kind of cancer looking like a large wart or fig. He was indisposed to operations.

Next we note a great medical authority who rose to supremacy in ancient times and influenced the theory and practice of medicine for a thousand years. *Claudius Galenus* (131-203 A. D.) the private physician of the young Commodus. He wrote 500 books, was the founder of *experimental physiology* and *pathology,* though he drew his knowledge of anatomy from the dissection of animals, especially hogs and monkeys.

He applied the principles established by Hippocrates but gave them a wider range. He held that the spirit controls the body and that the latter is formed of the firm matter and four humors, as with Hippocrates. This spirit works in three forms, the brain, the heart and liver. The cardinal humors were blood, mucus, yellow and black gall, which lie at the foundation of his theory of pathology. The mixing, quantity, displacing and action of these humors determine health and sickness.

He considered black gall, formed in the spleen, as the cause of cancer, and this theory continued to be held down to and into the 18th century.

Cancer, he considered as a malignant tumor caused by the entrance of particles of itch and leprosy, into the arteries and fleshy soft parts of the body, aided by the hardening of black gall. Carcinoma is a malignant, very hard non-ulcerous swelling or tumor. Black gall, he thought, was formed from humor melancholicus and hence melancholy women are more susceptible to cancer.

He emphasized the importance of early

diagnosis, but here he can go no farther than the probability, and has to depend on the course of the disease for certitude.

He did not know cancer of the internal organs, though writers before him presumed the fact theoretically. He considered occult cancer as the only curable form. "Accordingly," says he, "it is important to apply a remedy to the incipient malady before it should become thoroughly fixed in the system." He applied internal and external treatment. First he gave a purgative of aloes bitter principles of entrails, rhubarb and cassia. He also used "theriak" and "mithradates" (composed of 70 and 54 substances respectively) and also had his patients to drink goose blood—the old popular remedy. He also prescribed a special diet and forbade the use of those things which he thought favored the production of black gall. Forbidden were: (strong) wine, vinegar, cabbage, old cheese, highly seasoned meat, corned meat, goat, deer and rabbit meat and walnuts. He furthermore caused his patients to undergo fasts and sought to preserve them from mental excitement. Special diets were, barley broth, vegetables, milk, kid and veal, poultry, fish that were found at the foot of sea cliffs and light wines.

The external treatment consisted of bleeding and the use of a hot iron. He did not hesitate to use the operating knife, as in cancer of the breast, which he followed up by pressing the veins out (as was then customary) and cauterising the wound, attaining good success as he claimed. He also claims successes by purgatives alone! He depended mainly on the internal treatment as he regarded cancer as a disease of the system (a constitutional disease). He applied various salves along with other treatment. In occult cancer he used poultices made of bread and ash leaves. To lessen pain a salve made of poppy heads was used. Papaver, psyllium, dates and oesypus (sweat of sheep wool—one of the cosmetics of Roman women) were drugs used.

Leonides of Alexandria (about 180 A. D.) rendered service in the diagnosis and therapeutics of cancer. He lived in the time of M. Aurelius of Commodus.

He differentiated the sebaceous cysts and the lipomas from cancer. He was the first to define and describe the scirrhus in cases of cancer and noted their lack of blood and called attention to the solitary breast wart of breast cancer.

The warning of Hippocrates not to operate on ulcerous cancer made men timid for centuries about major operations. Leonides was bold in operating on breast cancer and followed with the hot iron to finish the destruction of the diseased tissue and to control bleeding. Leonides used a thoroughly rational method of operating and observed the indication for the operation. So his work marks progress.

In the West progress ceased in art and science with the fall of the empire. We now turn to the East.

The Byzantine Period marks the time of compilation of medical writings. *Oribasius* (325-403 A. D.) physician to Emperor Julian, the Apostate, 361-363 A. D. and died at Constantinople 403 A. D.

In a passage of his writings he mentions a *fermenting* substance as the cause of cancer. He refers to an acidity which ulcerating cancer is said to produce. He follows Galen in the use of arsenic and sandarac. *Aetius of Amida* (502-575 A. D.) physician of the Emperior Justinian, made a medical collection and compendium of the older writers except Hippocrates.

He gives a good description of a uterine cancer to which Waldeyer calls attention. This, however, is a description which he says he copied from *Archigenes*.

Alexander of Tralles (525-605 A. D.) treated mostly internal diseases and rendered much excellent service (Phthisis, worms, etc.) In regard to cancer he followed the theory of his predecessor, who taught the pathology of the humors. In cancer of the liver he recommended drinks impregnated with iron.

Paulus of Aegina (625-690 A. D.) was acquainted with internal as well as external cancer, and says it can appear in any part of the body. He favored operation especially on breast cancer, but opposed it in other cases.

With him the classical period closes.

Die Lehre von der Krebskrankheit

Dr. Jacob Wolff, Berlin.
(The History of Cancer, by Dr. Jacob Wolff, Berlin). Translated from the German into English by Dr. Geo. W. Manly, M. A., PhD. (Leipsic 1886).

GRADING TUMOR MALIGNANCY

By Dr. F. H. Dieterich, Professor of Pathology Medical College of the State of South Carolina, Charleston, S. C.

Last summer I enjoyed the advantage of spending two months at the Mayo Clinic studying their laboratory methods and the large amount of surgical pathological material, which is examined there for diagnosis. Dr. Broadus, of that institution, is an ardent advocate of a scheme of grading tumor malignancy in which I believe you will find much of interest, as well as of practical value.

It is common knowledge, from a clinical as well as a pathological standpoint, that tumors are either benign or malignant. You know for example a fibroma or a wart can exist on a patient's back many years and never show any tendency to spread or metastasize, we call these, therefore, benign tumors. All malignant tumors, on the other hand are not of equal malignancy. A rodent ulcer on the forehead has nowhere near the malignancy that squamous epithelioma of the cervix manifests. These are malignant new growths from different parts of the body, but this difference in degree of malignancy is also shown by tumors from the same region of the body, arising from similar structures. This is best shown by the squamous epithelioma of the urinary bladder and I shall use this tumor to illustrate the principles of grading. Bear in mind other tumors, though to date not all, can be graded on the same principles, but so much excellent work has been done on this very type, with follow up statistics, that it will serve our present purpose best.

On just what does the grading of malignant neoplasmata depend? We can sum up the answer with the words "on cellular differentiation." This necessitates a careful microscopical study of a piece of the tumor removed; in other words a biopsy is performed, examining the removed tissue microscopically.

May I be permitted to give you a rather elementary discussion to make clear just what we mean by cell differentiation? If we take as a starting point the simple unicellular ovum and trace it through its development into the morulla and gastrula stages, and then beyond through its various buddings and anlages and invaginations, up to the completed individual, we can see that the underlying principle of it all is differentiation of cells, best adapting them to the functions they are to perform. It is no less than a development of evolution of the mature multicellular individual from the unicellular ovum. This differentiation is seen not only in the several varieties of tissue, but is well recognized in individual types. Connective tissue, for example, is differentiated to give form and firmness, hence the skeletal system; then again where smoothness and cushion-like elasticity is desired the ends of the bones are covered with the highly specialized, or differentiated, cartilage. This point of differentiation is also seen in epithelium, some is differentiated into a simple protective covering, other types have secretory activities, some are combinations of these. The degree of differentiation of the type of epithelium composing the tumor we are studying, knowing the normal epithelial structure from which the growth originated, determines the grade of malignancy. If for example, a tumor from the skin shows the growth to be chiefly composed of squamous cells, with much keratinization (both evidences of differentiation into the adult type of cutaneous covering) we would consider this of low grade malignancy. If, on the other hand, there is no evidence of this approach to the adult form of tissue, but the new growth is composed of closely packed cells, with very little, if any keratin, we would be inclined to place it in a higher grade of malignancy. The presence of many mitotic figures, particularly of the abnormal types, in a tumor will serve to place it in a grade of higher malignancy as will also the finding of many cells with large hyperchromatic nuclei.

Read before the South Carolina Medical Association, Spartanburg, S. C., April 22, 1925.

Arbitrarily we grade tumor malignancy as follows:

Grade 1. Three-fourths of the tumor shows differentiation of its cellular component and one-fourth is undifferentiated.

Grade 2. The differentiated and undifferential elements are in equal portion.

Grade 3. Three-fourths undifferentiated and one-fourth differentiated.

Grade 4. No evidence, or very little, of differentiation.

These are approximate values only.

It requires a thorough knowledge of normal histology and cytology to properly weigh the evidence before one is competent to grade neoplasms.

There are certain gross features of a tumor, such as the bladder epitheliomas exhibit, which may aid in the grading, but these criteria are not as reliable as the microscopical evidences of differentiation. These features are ulceration, infiltration of the surrounding tissues, and development of papillae, growing like a cauliflower into the lumen of the viscus. The age of the patient is also of value, but none of these is used in this scheme of grading the tumor.

I can best illustrate these points, and drive the essentials of my discourse home, by showing you several lantern slides I had prepared for this morning.

Of what practical value is this? I can see two distinct advantages:

1. We can offer our patients a more accurate prognosis. This in itself would be of sufficient value to make the method worth while.

2. We can also be guided as to the extent and nature of our treatment, by this means.

To illustrate—in the first and second degree squamous epitheliomas of the bladder treatment is by fulguration. Experience has shown that these can be thus conservatively removed and practically no metastases develop. Occasionally one of these low grade papillary squamous epitheliomas may be too large to remove this way. Also occasionally they may recur locally, but then they can be removed again by this rather simple method. The incidence of recurrence after fulguration of the low grade bladder epithelioma, I just mentioned, is no greater than after radical surgery. The third and fourth degree tumors, of this type, are treated by radical excision. You can see then that we can spare our patients a severe mutilating operation by at first grading the tumor at biopsy, removing a piece by the cystoscope.

The method is still new. It has not been applied to all tumors as yet, but bids fair to be one more step forward in diagnosis and treatment of a condition whose etiology even today is veiled in obscurity.

ACUTE PANCREATITIS

By Irvin Abell, M. D., F. A. C. S., Louisville, Ky.

In an experience embracing more than 900 operations on the biliary tract the writer has encountered eight cases of acute pancreatitis. All occurred in the course of more or less prolonged cholecystitis, presenting varying degrees of gall-bladder pathology. The term "acute pancreatitis", as here employed, covers at least three distinct conditions ,acute pancreatic necrosis, acute hemorrhagic pancreatitis and pancreatic abscess. It is believed that the latter is but an advanced stage of the first two, the patient surviving the acute onset with subsequent infection and suppuration of damaged pancreatic tissue and hemorrhagic deposit resulting in abscess formation.

Of the eight cases, four occurred in men, and four in women: four were markedly obese, one moderately so, two were of muscular development and one quite emaciated. The average age of the patients was forty-seven years, the individual ages being 32, 34, 39, 50, 51, 51, 54 and 64.

Previous History

Four of the eight patients had had typhoid fever and all gave a definite history of gall-bladder disease. Duration of symptoms referable to gall-bladder: two cases, 1 year; two

Address in Surgery before the South Carolina Medical Association, Spartanburg, S. C., April 22nd, 1925

cases, 2 years; one case, 3 years; one case, 6 years; one case 8 years and one case, 20 years; average 5 years, 4 months. Six gave a history of gall-bladder colics while in the remaining two the colic that occurred with the onset of the pancreatitis was the initial one. All had suffered digestive disturbances for varying periods of time. One had undergone an operation for removal of stones and drainage of gall-bladder six years before coming under my care, at which time he presented a second crop of calculi in his gall-bladder with an acute hemorrhagic pancreatitis.

Symptoms referable to acute involvement of pancreas

Durations, three, three days; one, four days; two five days; one, seven days and one, ten days. In six the symptoms attracting attention to the pancreas developed at periods varying from one to four weeks following a gall-bladder colic, there being a subsidence of pain and other subjective symptoms referable to the gall-bladder before onset of those referable to pancreas or else a continuation of gall-bladder symptoms with those of pancreas gaining in intensity and consequent ascendancy. In two the pain accompanying the onset of the pancreatitis was the initial one, the previous symptoms being of reflex digestive character of mild degree.

Pains. The pain in five was acute, severe and agonizing, accompanied by incessant nausea and vomiting, representing the ultra acute type; in three it was much less severe, the cases pursuing a milder course. In four it was referred to the epigastrium and right subcostal region, being described as similar to that experienced with previous attacks of gall-bladder colic: in two it was felt in the right subcostal region, extending across the upper abdomen to the left subcostal area: in two the maximum intensity was noted in the left subcostal area. Cyanosis was observed in but one. The pulse in three was under 100, 88, 90 and 96: in five over100, 110, 115, 120, 138 and 140. Temperature varied from 99.5 to 102. Systolic blood pressure from 100 to 154. Considering the pathology found at operation the leucocyte counts were not high, 5300, 6800, 9800, 11800, 12700, 13300, 15300, 18800. Such blood findings are in harmony with the belief that the extensive destruction of pancreatic tissue is due to an activation of the trypsinogen within the pancreas rather than to actual bacterial attack.

Urine. The urine in all cases showed the presence of albumen; none showed the presence of sugar. Bile was present in four, casts in three, microscopic blood in six and microscopic pus in seven.

Mass. In four patients no mass was detected while in the remaining four an enlargement was distinctly palpable: in two the mass was felt in the right hypochondrium, in one in the left hypochondrium and in one it extended transversely across the abdomen.

Pre-operative Diagnosis. The diagnosis in four was acute cholecystitis; in one of these the detection of a mass at the site of the pancreas after the patient was anesthetized led to a correct diagnosis before the incision was made. In one the condition was thought to be acute intestinal obstruction and in the remaining three a correct diagnosis of acute pancreatitis was made.

Morbid Anatomy. Free fluid was found in the greater peritoneal cavity in two cases, in one of which it was bile tinged and of large quantity: hemorrhagic fluid exudate was present in the lesser peritoneal cavity in six instances varying in amount from a few to 2600 c. c.

Rather widely disseminated areas of fat necrosis were encountered in three and none detected in five. The gall-bladders were visibly diseased in all eight cases and each contained calculi: the common ducts of all upon palpation were negative for stones.

In three the pancreatic lesion presented as a hemorrhagic pancreatitis, in two the hemorrhagic infiltration being confined to the pancreas and tissues immediately adjacent; in one of moderate size, in the other of such extent as to form an oblong mass across the abdomen which was palpable through a rather thick wall: in the third the infiltration involved not only the pancreas but extended into the subhepatic and right perirenal spaces and into and behind the ascending mesocolon as far as the cecum. In one case the pancreas was en-

larged to approximately four times the normal size, nodular and elastic, bile-tinged fluid in lesser and greater cavities, thickening and edema of gastrohepatic omentum and pancreatic fatty capsule, all of which bled on manipulation although no visible hemorrhagic deposit was present.

One presented a moderate increase in size of head and right half of body with marked enlargement of left half of body and tail, the mass involving the gastric surface of spleen, the lesser peritoneal cavity and the transverse mesocolon: no visible hemorrhagic deposit present.

In one, the head of the pancreas was markedly enlarged and at operation was thought to be a subacute pancreatitis accompanying an acute cholecystitis: the patient died nine days after operation and autopsy revealed acute pancreatic necrosis involving the head and part of the body of pancreas.

In one, the lesion presented as a retroperitoneal pancreatic abscess holding six ounces of pus in which were flocculi ,caseous masses and bits of sloughing pancreatic tissue. Cultures from pus showed colon bacillus.

In one, the condition presented as a pseudocyst of the lesser peritoneal cavity, 2600 c. c. of hemorrhagic fluid, sterile upon culture, being removed: the layer of peritoneum forming the posterior wall of the lesser cavity immediately over the pancreas had disappeared, the partly necrotic pancreas being exposed to view upon removal of fluid.

Operations

In six cases a drainage of the pancreas was employed, the route of approach being through the gastrocolic omentum in four and the gastrohepatic omentum in two: in four of the six, cholecystostomy with removal of calculi was done, in one cholecystectomy was done, in one the condition of patient was so precarious that the gall-bladder pathology was not disturbed. Of the two in which pancreatostomy was not employed, in one the pancreatic inflammation involved the left half of the body and the tail of the pancreas without apparent necrosis and a removal of calculi and cholecystostomy was relied upon to give drainage: in the other, the pancreatic pathology was thought to be a subacute inflammation complicating cholecystitis: a cholecystectomy with common duct drainage was done followed by death, autopsy showing acute pancreatic necrosis. This case furnished the only fatality in the series, a mortality of 12.5 per cent.

Synopsis Case Histories

Case I. No. 5237-2-23-1917. Male, age 32. History gall-bladder colics. Duration present illness three days. Pain, nausea, vomiting. Tenderness right upper quadrant. Jaundice present. Bile, albumin, casts and pus in urine. White cell count 5300, P. M. N. 64.7, small lymphocytes 23.3, large lymphocytes 11.5. Tentative diagnosis, Cholecystitis. Operation. Head of pancreas shows marked enlargement: removal large distended gall-bladder containing calculi: drainage common duct through cystic duct. Postoperative history: No bile from drainage tube. Bleeding from bowel, stomach, gums and drainage tube. Severe epigastric pain, collapse and death on ninth day after operation. Autopsy—Acute Pancreatic Necrosis. Pathological report—Chronic Cholecystitis, Acute and Chronic Pancreatitis.

Case II. No. 10097-3-16-1921. Male, age 51. Operation for gall stones six years ago. History of colics before and since operation. Last colic seven days ago, since when has been confined to bed. Pain in epigastrium radiating to gall-bladder area and to right renal area. Temperature 98.2, pulse 90. Slight jaundice. Rigidity and tenderness right upper quadrant, most marked tenderness in right renal area. Urine contains bile, albumen, casts, microscopic blood and pus. White cell count 6800. Tentative diagnosis: Cholecystitis with recurrent calculi. Operation—Adherent mass consisting of gall-bladder, duodenum, pylorus, colon and omentum. Upon separation hemorrhagic infiltration with areas of necrosis in pancreas, subhepatic and right renal spaces, and ascending mesocolon as far as cecum-gall-bladder containing calculi removed and common duct drained through cystic duct. Gastrohepatic omentum opened and pancreas drained with gauze cigarette—

cigarette drains placed in subhepatic and right renal spaces. Recovery.

Case III. No. 13119-11-8-1922. Female, age 39. History digestive disturbance; no colics. Acute onset forty-eight hours ago, pain, nausea, vomiting, constipation, slight cyanosis. Pulse 120, temperature 102. Leucocytes 15,300. P. M. N. 86.5 per cent.. Abdomen shows slight mass in left upper quadrant. Urine shows albumen, casts, microscopic blood and pus. Tentative diagnosis, intestinal obstruction. Operation—Acute hemorrhagic pancreatitis. Pancreatostomy through gastrohepatic omentum. Cholecystostomy with removal of stones. Recovery.

Case IV. No. 14099-10-15-1923. Male, age 52. History of gall-bladder colics and reflex digestive disturbance. Has had recurrent attacks of iridocyclitis for years. Last colic four weeks ago. Since onset of last or present illness has had continual pain in right upper quadrant. For past week has had fever, 101-102 degrees. Tender mass in right upper quadrant. Leucocyte count 12800, P. M. N. 78 per cent. Urine shows albumin and microscopic pus. Tentative diagnosis: Cholecystitis. Operation: Gall-bladder contains stones and is not adherent to mass. Cholecystostomy with removal of calculi. Mass corresponds to pancreas and overlying omentum shows multiple areas of fat necrosis. Mass approached through gastrocolic omentum and is found projecting into lesser peritoneal cavity. Opened and evacuated of six ounces of pus showing colon bacillus on culture: necrotic putty-like masses of pancreatic tissue removed from abscess cavity. Drainage. Recovery.

Case V. No. 15678-3-31-1924. Female, age 34. Colics and digestive disturbance for more than one year. Marked and associated with vomiting at intervals for past year. At times, vomitus has contained blood. Has been bedfast for past six months. Weight one yar ago 173, present weight 100. In October 1923 first noted swelling of mass in upper abdomen which at times has disappeared; has been constantly present for past month. Pulse 138, temperature 100. Fluctuating mass occupying upper abdomen between the costal margins, extending from ensiform to point below umbilicus, most marked to left of midline. Blood shows hemoglobin 68, Red Blood Cells 3,170,000, leucocytes 13,300. Urine shows albumin, microscopic blood and pus. Tentative diagnosis: Cholecystitis, pancreatitis with pseudocyst of lesser peritoneal cavity. Operation: Local anesthesia. Lesser peritoneal cavity opened above stomach and evacuated of 2600 c. c. of hemorrhagic fluid sterile on culture. Pancreas shows necrosis of surface exposed in sac. Gall-bladder contains multiple calculi and is not disturbed. Edges of incision in lesser cavity are sewn to parietal peritoneum and lesser cavity drained with tubes. Recovery.

Case VI. No. 16360-9-1-1924. Female, age 50. Digestive discomfort, epigastric pain and colics for three years. For past six weeks has noted increase in pain which has been practically continuous with evening temperature of 100 to 101. Abdomen has increased in size. While in hospital for further study was seized with acute pain, nausea, vomiting and fever rose to 102: Pulse to 140. Abdomen shows presence of fluid, is tender and rigid over gall-bladder extending to left of midline. Leucocyte count on entering hospital 11,800, after onset acute attack 18,100, P. M. N. 82.5 per cent. Urine shows albumen, microscopic pus and blood. Tentative diagnosis: Cholecystitis, acute pancreatitis. Operation: Bile tinged, free fluid in greater activity. Gall-bladder is thick walled, edematous and contains stones. Cholecystostomy with removal of stones. Pancreas is greatly enlarged, nodular and soft in consistence; adjacent tissue is edematous, hyperaemic and bleeds on slightest manipulation. Gastrocolic omentum opened and drains placed down to head of pancreas. Recovery.

Case VII. No. 16713-11-3-1924. Male, age 64. History of gall-bladder colics and digestive disturbances over a period of twenty years. Mild colics three weeks ago. Present acute illness began with severe colic six days ago: pain has necessitated opiates continually since. Nausea and vomiting marked. Abdomen exquisitely tender in epigastrium and under right costal margin. Pulse 108, temperature 100. Leucocytes 9800. Urine shows

albumen, microscopic pus and blood. Tentative diagnosis: Cholecystitis. When under anesthetic mass could be felt extending across abdomen corresponding to site of pancreas: added diagnosis of acute pancreatitis made. Operation—General peritoneal cavity contains free clear fluid. Lesser peritoneal cavity opened through gastrocolic omentum, contains hemorrhagic fluid, multiple areas of fat necrosis in omentum and mesocolon. Pancreas is embedded in hemorrhagic exudate and presents multiple areas of necrosis. Cholecystostomy with removal of calculi: pancreatostomy with tampon drainage. Recovery. During convalescence this patient had several hemorrhages from drainage trace requiring packing for control.

Case VIII. No. 17157-2-18-1925. Female age 51. History gall-bladder colics and digestive disturbances over a period of years. Duration present illness four days: severe colic, nausea, vomiting, slight jaundice: greatest intensity of pain noted in left upper quadrant: in previous attacks or colics pain had always been noted in right upper quadrant. Pulse 96, temperature 101: tender over entire epigastrium, most marked to left midline. Leucocytes 12,700. Urine shows albumin, bile microscopic blood and pus. Tentative diagnosis: Cholecystitis. Operation: Gall-bladder thick walled, non-adherent, contains multiple stones. Pancreas is enlarged, the left half of body and the tail are greatly enlarged and embedded in inflammatory infiltration which involves the hilum of spleen and transverse mesocolon. No hemorrhagic deposit present. Cholecystostomy with removal of stones. Recovery.

Summary

Acute pancreatic necrosis, acute hemorrhagic pancreatitis and pancreatic abscess are not separate clinical entities, but represent different stages of the same process, the origin of which is not entirely clear. The rapid destruction of pancreatic tissue is due to the activation of trypsinogen within the gland itself: normally this is done by the enterokinase in the duodenum. The most logical explanation for its activation within the pancreas is that it is due to a retrograde injection of infected bile or duodenal contents through the ducts of Wirsung and Santorini as well as by the minute hemorrhages and bacterial toxins resulting from a pancreatic lymphangitis. Biliary tract infections have been present in more than 50 per cent of the reported cases, in 100 per cent of the series herewith reported. The lymphatics draining the gall-bladder and bile ducts are in intimate association with the lymphatics of the head of the pancreas before they join the aortic group. Infection following this path readily enters the head of the pancreas where resultant inflammation and minute hemorrhages may readily activate the pancreatic ferment. The powerful digestant action of the ferment upon the blood vessels of the pancreas doubtless explains the presence of marked hemorrhagic deposit while the absorption of the autolyzed pancreas, toxic protevses, is in large measure responsible for the shock and early toxic manisfestations.

The area of fat necrosis commonly seen in the peritoneum, root of mesentery, mesocolon and omentum are due to the action of ferments in the escaped pancreatic secretion upon the fat molecule, breaking it up into its component glycerine and fatty acids. Cases reported in which such areas have been observed in the pericardial and extrapleural fat would indicate that these ferments are capable of transportation of lymph or blood stream.

There are no pathognomonic symptoms, pain, vomiting and collapse being the most important encountered. The physical signs will depend on the stage of the disease at which the patient is seen: in some cases the lack of symptoms and physical signs is remarkable when compared with the extent and severity of the local lesion.

Laboratory examinations are of but little aid in reaching a diagnosis: for this reliance must be had upon the history of previous upper abdominal disease. the present symptoms and physical findings: pain radiating from the right costal margin across the upper abdomen, tenderness following the course of the pancreas, pain and tenderness to left of midline and the detection of a mass in the pancreatic area are beacon lights when elicited.

After all it is not so important to make a correct diagnosis of acute pancreatitis as it is to make a correct diagnosis of an acute surgical lesion in the upper abdomen: the predominance of symptoms at and above the umbilicus will usually permit of this localization when prompt operation will direct one to the pathology. The earlier the operation, the less the destruction of the pancreas, the less the absorption of toxic protevses, the less the peritonitis and consequently the greater the number of recoveries. The indications are to relieve tension, to stop hemorrhage, to prevent leakage and to afford drainage: the fact that the pancreas has no proper capsule, being embedded in loose retroperitoneal cellular tissue and fat permits of rapid extension of inflammatory infiltration: pancreatostomy with application of tampon and tube drains in and around the focus of pancreatic destruction will best fulfill these indications. The drainage of the gall-bladder, when the condition of the patient permits, is a worth while procedure in promoting recovery and securing immunity from further attacks.

NERVOUS AND MENTAL DISEASES

By J. M. Beeler, M. D., Columbia, S. C.

NERVOUS AND MENTAL DISEASE

Realizing that the General Medical Profession has little spare time to make any extensive study of the mental problem and mental diseases, but knowing that in this work they meet and recognize many early cases of mental disease as well as advanced cases, the purpose of this department during the coming year will be to assist them as much as possible in recognizing and treating these cases.

The advance made during the past ten years in mental medicine has been so great that unless one is specializing in this work it is impossible to keep posted, and, unfortunately the terminology is so different from general medicine and there is such a tendency on the part of the men doing this work to use same, thus speaking in a language known and understood only by themselves, that the general practitioner has had little opportunity to keep himself informed on mental hygiene.

It is almost impossible to realize the mental problem confronting this country today, the great number of mental cases and the fact that at least twenty to twenty-five per cent of these cases are preventable. Some idea of the problem can be conceived when we realize that in 1910 there were more insane in the State Institutions in this country than there were students in the Universities and colleges and that the cost of their care plus the economic loss from them being idle cost the states as much as was made from the combined annual export of wheat, corn, tobacco and dairy and beef products. In 1915 it was estimated that the cost for the mental cases in Federal and State Institutions amounted to over 35 million dollars. This did not count the cost for the care of the feebleminded and Defective cases cared for in County Homes. The economic loss alone, not to consider the ruined lives and families, should awaken in all of us a strong impulse to consider the mental side of our cases as thoroughly as we now study the physical body.

Psychiatrists and men interested in mental problems have realized for a long time that custodial care and treatment in mental diseases were not sufficient and like other branches of medicine, the tendency has been toward prevention. The modern idea of Mental Hospitals is no longer to make them merely a place of treatment and care, but they must become educational institutions for Mental Hygiene for the district or state they serve.

If prevention of Mental Disease is to be accomplished it is fully realized that the general practitioner and the public must have some idea of the early symptoms of the dis-

ease, its course and preventive treatment.

If early recognition of the pre mental case was made by the family physician and the case treated, many a hopeless case of mental disease would be prevented. At the present time too little attention is paid to the directing force of the body and the Mental state neglected or ignored until a psychosis develops and the patient becomes a disturbing influence in the community. Many are the patients received at hospitals for mental disease who could have been treated in their home environments had the family physician but appreciated fully and interpreted correctly the early manifestations of the disease. Not only is this true, but in the hands of the family physician lies, to a great extent, the future welfare of the patient when the hospital has returned him, as improved, to his former place in society.

The Department of Mental Hygiene was established in January 1924 as part of the educational and preventive work conducted by the State Hospital at Columbia.

The Department work is two fold, educational and clinical. It is an active part of the hospital and through it the parole patients are kept in touch with and as much as possible advised in regard to their condition.

The educational part of the program consists in talks on Mental Medicine to various Medical Societies, and the Senior Class in the State Medical School. Courses on Mental Nursing are given the senior classes of the nursing schools where the Clinics are held. Talks on mental problems are given various civic organizations and lectures on Abnormal Psychology are given to classes in various colleges and schools. The department is more than glad to give talks on Mental Hygiene and its allied subjects to any group of Physicians or County Medical Society.

The Clinical side of the work has gradually developed and there are now Clinics held at Columbia, Anderson, Greenville and Spartanburg. They are open to the Medical Profession for Diagnostic purposes, suggestion on treatment and advice on mental problems. The Clinic will give the mental treatment while the physician cares for the physical side of the case, if requested.

The Clinics are also used by the Local Social agencies for character studies in their problem cases, and by the Juvenile Court in their behavior cases. The schools have used Clinics for mental grading of their children and for advice on their mental problems.

During the coming month this space in the State Journal will be devoted to brief discussions of different phases of Mental Hygiene such as Early Symptomatology, Preventive Psychiatry and outlines and diagnostic symptoms of the most common mental diseases, and it is hoped that these summaries may prove of practical value to the busy general practitioner in his work.

Location and date of Mental Clinics held over the state at present:

Greenville—June 11, June 25, July 9, July 16.

Columbia—June 1, 8, 15, 22, 29, July 6, 13, 20.

Anderson—June 10, 24, July 8, 22.

Spartanburg—June 12, 26, July 10, 24.

GASTRO-ENTEROLOGY

By F. M. Durham, M. D., Columbia, S. C.

THE HISTORY OF THE INJECTION TREATMENT OF HEMORRHOIDS

Just before and just after the Civil War Medical education was slipshod. The medical colleges had no trained men to teach proctology and the young graduate in medicine looked upon all anal pathology as "piles". These young physicians had been taught that the only way to get relief from piles was to undergo a very painful operation requiring a general anaesthetic, an operation which was liable to be followed by stricture or incontinence.

During this period, Dr. Mitchell of Ohio conceived the idea of injecting hemorrhoids with a carbolic acid solution. Unfortunately this formula was kept secret and sold to anyone for five dollars after binding them to secrecy. The only requisite then for a "pile doctor" was to know the formula and own a hypodermic syringe. This was the beginning of the Office or Ambulant Treatment of Piles.

The woods soon became filled with "pile doctors" who traveled over the country practicing their art, especially in the Middle West and the Western Portion of the United States. Fortunately a few "itinerant" or irregular doctors did perfect the injection treatment of hemorrhoids and developed a technique for the treatment of ano-rectal diseases that was far ahead of anything that then existed. Unfortunately they shrouded their work in mysticism and kept the formula secret and did a great deal of advertising. This kept them from being recognized by the regular physician and their good work was overshadowed by the inferior work of the ignorant quacks and charlatans.

A fight soon took place between the adherents of the injection treatment and our brethren who believed only in the operative treatment of piles. The itinerant physician went from town to town, advertising to cure piles without the knife or thermocautery, without the hospital bill, without detention from work, without a general anesthesia and without pain. The regular physicians condemned the injection treatment of hemorrhoids claiming that it produced great sloughing and frequently stricture, which it did while in the hands of the ignorant quacks. The fight became so intense that the injection of hemorrhoids was looked upon as quackery.

Fortunately a few unbiased and highly respectable men did give the carbolic acid treatment a fair test and they found it to be very efficacious. Tuttle was one of these men. Martin of Philadelphia did much to popularize the method. Arthur S. Morley, F. R. C. S., England, is the much noted and most ardent supporter of the carbolic acid injection at the present time.

In 1916 Terrell of Richmond, Virginia discovered that he could inject a solution of quinine and urea hydrochloride into internal hemorrhoids and that the hemorrhoids would disappear without sloughing, without infiltration and with very little, if any, pain. Since this discovery the carbolic acid treatment has been on the wane and a solution of the quinine and urea hydrochloride has become the popular injecting solution for internal hemorrhoids throughout the United States.

PUBLIC HEALTH

By R. G. BEACHLEY, M. D., Health Officer, Spartanburg County, Spartanburg, S. C.

DEATH RATE TOO HIGH AMONG AMERICAN MOTHERS

Five nations maintain better infant mortality rates than the United States, and sixteen nations have lower death rates for mothers The America Child Health Association makes the following statement regarding infant and maternal mortality in the United States.

"One newspaper is quoted as stating that the most important happening in this country last year was the birth of 2,000,000 children.

How many of them lived? This is not known accurately, because there remain eighteen states whose registration of births is so incomplete as to exclude them from the birth registration area. Of the thirty states in this country within the registration area, one child in every thirteen born dies during its first year. If the same ratio applies to the states whose birth registration is incomplete we have a total loss of 190,000 American children a year.

That is startling, but it is a long way from the day when parents were considered fortunate if they were able to bring up two out of every three of their children.

Still, it leaves us behind five other nations, including New Zealand, the best off of all countries which keep books on their greatest asset. New Zealand loses only one in twenty of its children during the first year.

But here are things almost as bad as death. There are children unfitted or not half-fitted for life. And there are hordes of them just enough handicapped physically or mentally to be drawn into the ranks of those who may labor long, but receive little happiness or substance.

Here are some of the handicaps (the figures may be taken as approximately correct):

Studies made in many communities indicate that millions of American school children suffer from malnutrition of physical defects, most of which can be prevented and many of which can be corrected.

They range from 75 per cent with dental defects, to one-half of one per cent with organic heart trouble. In between come those with tuberculosis defects of vision, etc.

Then, as to mothers:

According to the United States Census Bureau, 17,800 women in the United States of America died from conditions caused by childbirth in 1919. In 1920 the rate rose to eight per 1000. In Italy, crowded as she is, only five mothers die per 1000.

Sixteen nations have a lower death rate for mothers in childbirth than we have.

To focus attention upon the above facts, without at the same time attempting to indicate some of the ways out, would be of little service. May Day, which is celebrated by children in many communities, perhaps offers the best opportunity to combine incentives to increased outdoor life for children with efforts toward a knowledge of what to do next in child health and child health education."

UROLOGY

MILTON WEINBERG, M. D., Sumter, S. C.

Crosbie, Arthur H.: Pyelonephritis. The Boston Medical and Surgical Journal, May 7, 1925, Vol. No. 19.

The writer states that the term pyelitis should be abandoned in cases of infection of the kidney pelvis as the invasion always extends to the tubules and never involves the pelvis alone. Pyelonephritis signifies any bacteria invasion of the kidney. This is the most common condition that the urologist has to deal with.

Crosby dogmatically writes as follows:

"1. Pyelonephritis occurring in an otherwise normal kidney, unless caused by the tubercle bacilli, tends to get well.

2. Recurring attacks no matter how slight should be investigated by pyelograms.

3. If attacks recur in kidneys that have been proved to be normal otherwise, always look for focal infection especially devitalized teeth, tonsils and intestinal stasis.

4. Pain is not a constant nor a reliable symptom either in a simple pyelonephritis or in pyelonephritis developing in an abnormal kidney. Many times pyelonephritis developing in an abnormal kidney, that is in the presence of stones, kinked ureter, etc., may entirely destroy that kidney without localized pain ever being present.

5. Every case of pyelonephritis should have the urinary sediment followed after the subsidence of symptoms. If red cells or leucocytes persist pyelograms should be done. A kidney rarely becomes destroyed without telltale evidence in the urinary sediment."

The most common organism found is the colon bacillus, but this is often a secondary invader that has outgrown some other pus producing bacterium.

The writer mentions the work that Bumpus Meisser and Rosenow have contributed to kidney infections. Cultures were made from the urine of a number of patients with pyelonephritis showing the colon bacillus. Rabbits were inoculated from these cultures and no infection was reproduced in the kidney. Cultures were then made from the roots of extracted devitalized teeth of these same patients and a green producing streptococcus was found. These organisms from the cultures were injected into rabbits and in all instances a kidney infection was set up, thereby showing a specific and selective action for kidney tissue. It is interesting to note that the observers "Purposely took patients in whom the devitalized teeth showed no bony changes by the roentgen ray. The writer quotes their paper as follows: "It is not generally appreciated that there may be a vast number of organisms around a devitalized tooth before they destroy sufficient bone to make their presence manifested in the roentgenogram. We believe, therefore, that it is a mistake to exclude the teeth as a possible focus of infection simply because apical abscesses are not demonstrated by the roentgen ray.

Crosby thinks that all devitalized teeth should be removed regardless of whether they are causing symptoms or not.

A focus of infection in any part of the body may cause pyelonephritis. Intestinal stasis is frequently a factor. Trauma, fatigue, exposure to cold, stone, tumor and anything which interferes with the proper drainage of the kidney, such as aberrant blood vessel, kink of the ureter, stricture of the ureter, gravid uterus, prostates, etc., is a factor in production of pyelonephritis.

The infection is usually through the blood stream. The writer does not think that ascending infection is common though its possibility has been shown by Graves. He thinks that the chill which follows urethral instrumentation is due to a pyelonephritis caused by bacteria entering the blood stream.

"The symptoms vary all the way from none

to most marked symptoms of prostration and localized pain. Many people complain of nothing but frequency and many of these cases escape under the diagnosis of cystitis. Where the bladder is much involved terminal hematuria is not uncommon. Occasionally hematuria is a prominent symptom. Not infrequently the symptoms are those of a stone passing down the ureter. The pain was caused by the passage of plug of mucous down the ureter. At such a time it is not uncommon to have a patient pass clear urine as the urine from the infected is shut off. Pyelitis developing where there is obstruction to the outflow of urine anywhere in the urinary tract is a most serious affair and is apt to have fatal results unless overcome."

In the acute cases he advocates the usual simple palliative measures and catheterizes the ureters in these cases only when there is evidence of obstruction. All foci of infection should be removed and he thinks that the devitalized teeth should be extracted. Recurring attacks should always demand a thorough urological examination of the kidneys and this is also applicable to children. No case of pyelonephritis should be dismissed until the urine is free from pus and blood cells. He has found pelvic lavage through the ureteral catheter with 2 1-2 per cent mercurochrome solution very satisfactory in conjunction with other lines of treatment.

ROENTGENOLOGY

By T. A. PITTS, M. D., Columbia, S. C.

Good clear radiographs made in the proper positions is the most accurate and accepted method of examination of bone injuries, fractures and dislocations and since its more general employment it has been the one big factor in lessening the number of deformities of traumatic origin. The practice of palpation and manipulation for the well known sign, crepitus as the sole method of diagnosis is rapidly on the decline and even the laymen are rightfully demanding more, for it is generally known that it is impossible to tell positions of fragments thus.

The radiographic examination gives correct information as to the extent and position of the injury, direction of the fracture lines and position of the fragments; all of which are eminently necessary for the correct treatment and employment of proper appliances, and the plate is a permanent record of the case.

One does not have to be embarrassed in the court room many times by having to answer negatively to the question, "Did you have this X-Rayed" before he established it as a routine to have all injury cases thus examined.

Our courts recognize this as a necessary step in the handling of injury cases and one lays himself liable when he attempts to treat these cases without this necessary information.

The practice of employing Dentists and otherwise inexperienced men for radiographic work, who make probably one plate a month experience in interpretation. The best men often make inadequate plates, from incorrect positions, lack of experience in exposure time, poor dark room technique and practically no experience in niterpretation. The best men require good plates for correct reading and with the above handicaps and the lack of experience as above mentioned this form of examination is certainly worth less than the usual cost.

On account of the number of incorrect positions found after splints had been applied, we have recently tried to encourage secondary examinations by making these additional plates at a substantial reduction in price, making it well worth to patient and Doctor.

SURGERY

SAMUEL ORR BLACK, M. D., Spartanburg, S. C.

THE MANAGEMENT OF HERNIAS

Coley, of New York, in the International Journal of Medicine and Surgery, divides hernia into, those best treated by mechanical means and those preferably disposed of by operative procedure.

The bandage treatment for hernia is recorded nine centuries before Christ. The Steel truss was first used in 1628 in France. Modern trusses are classified into three types.

I. The Knight truss, perhaps the most practical for young children. It is easily adjusted, cheap, and not hard to keep clean.

II. The French truss, a semi-elliptical spring, leather or cloth covered, a well stuffed pad attached to one end, the other end terminating in a strap, which passes around the back and fastens to the pad in front. It may be made for a double hernia. It is efficient, moderate priced, and is the model in routine use in the Coley Clinic.

III. The Frame truss, is a modern refinement, representing comfort and practicability. It has a metal frame, which encircles the body, and to the frame a pad with water in vacuo is attached.

Indications for lechanical treatment.

1. Children below three years of age with hernias that can be held up.

2. Adults who desire temporary postponement of operation for brief times—business and family reasons.

3. Adults with intercurrent disease which prohibits operation.

4. Aged people.

5. Certain recurrent hernias.

6. Umbilical hernias in children should be s'rapped.

7. Post-operative ventral hernias in very obese people are sometimes best treated by binders or strapping.

Contra-indications to mechanical treatment.

1. Incarcerated, or strangulated hernias.

2. Hernias associated with hydrocele of the cord or undescended testes.

3. Large, long standing scrotal hernias which slip by a truss.

4. Epigastric hernias.

Indirect inguinal hernia should be treated by the Bassini technique or one of its modifications.

In direct inguinal hernia the percentage of operative recurrence is greatest. This explains the various modifications which different surgeons have devised for the cure of direct hernia.

One school has utilized the rectus muscle and sheath, another has used the external oblique oponeurosis for additional support.

Gallie has recently introduced the living suture. It is noteworthy for the treatment of direct, recurrent indirect, umbilical and ventral hernia. He removes a piece of fascia lata, and splits it into strips, 1-4 inch wide and uses them as sutures. The gap or abridgement between poupart ligament and the internal oblique muscle is filled in by weaving the parts together as a sock is darned and no attempt is made to pull them together as has heretofore been done when catgut is used. The technique, of course, is tedious, requires time and skill and familiarity.

In operating for femoral hernias, the femoral route is easier and quicker and just as satisfactory provided the femoral canal be closed.

Local anesthesia has in certain instances, a few advantages, though it has its limitations. It s not suitable for children or nervous adults. It does not permit of ready dissection, in large recurrent hernias.

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